We Claim:

1. A method for use in at least a portion of a wireless communication system in which downlink signals are communicated from at least one of one or more base stations to respective ones of a plurality of terminals, and uplink signals are communicated to at least one of one or more base stations from respective ones of a plurality of terminals, the method comprising the steps of:

using dirty paper coding to compensate for interference among the downlink signals; and

using multi-user detection to compensate for interference among the uplink signals.

2. The method of claim 1, wherein the terminals are mobile terminals.

3. The method of claim 1, wherein:

the compensation for the downlink signals is performed using an order of the terminals that defines which terminals' downlink signals are used to compensate for interference in which other terminals' downlink signals; and

the compensation for the uplink signals is performed using a second order of the terminals that defines which terminals' uplink signals are used to compensate for interference in which other terminals' uplink signals.

4. The method of claim 3, wherein the second order is based on at least one different criterion than the first order.

5. The method of claim 3, wherein the first order is based on at least one of the following criteria:

the order in which the terminals of the plurality initiated a communication session with the one or more base stations;

the reverse of the order in which the terminals of the plurality initiated a communication session with the one or more base stations;

the respective amounts of data to be transmitted between the terminals and the one or more base stations; and

randomness.

6. The method of claim 3, wherein the second order is based on at least one of the following criteria:

the order in which the terminals of the plurality initiated a communication session with the one or more base stations;

the reverse of the order in which the terminals of the plurality initiated a communication session with the one or more base stations;

the respective amounts of data to be transmitted between the terminals and the one or more base stations; and

randomness.

7. The method of claim 3, wherein the first order is defined by:

a) identifying an individual one of the terminals for which a certain operating parameter value would be optimal in the absence of interference from the other terminals in the plurality;

b) assigning the individual terminal in step a) to have an index of 1;

c) identifying another individual one of the terminals for which the certain operating parameter value would be optimal in the

presence of interference from the assigned terminals in the plurality and in the absence of interference from unassigned terminals in the plurality;

d) assigning the individual terminal in step c) to have the next unassigned index in the order; and

e) repeating steps c) and d) until all of the terminals in the plurality are assigned an index in the order.

8. The method of claim 7, wherein:

the operating parameter comprises data rate; and

the optimal operating parameter value is the data rate having the highest magnitude of the data rates of the respective terminals.

9. The method of claim 8, wherein at least one other operating parameter of the terminals is fixed.

10. The method of claim 3, wherein the second order is defined by:

a) identifying an individual one of the terminals for which a certain operating parameter value would be optimal in the absence of interference from the other terminals in the plurality;

b) assigning the individual terminal in step a) to have an index of one;

c) identifying another individual one of the terminals for which the certain operating parameter value would be optimal in the presence of interference from the assigned terminals in the plurality and in the absence of interference from unassigned terminals in the plurality;

d) assigning the individual terminal in step c) to have the next yet unassigned index in the order; and

e) repeating steps c) and d) until all of the terminals in the plurality are assigned an index in the order.

11. The method of claim 10, wherein:

the operating parameter comprises data rate; and

the optimal operating parameter value is the data rate having the highest magnitude of the data rates of the respective terminals.

12. The method of claim 11, wherein at least one other operating parameter of the terminals is fixed.

13. The method of claim 3, wherein, in the portion, signals are communicated between at least one of the one or more base stations and a respective one of a second plurality of terminals, and the method further comprises the step of:

using a compensation scheme to compensate for interference among the signals from the at least one of the one or more base stations to the second plurality of terminals.

14. The method of claim 13, wherein the other compensation scheme comprises multi-user detection.

15. The method of claim 3, wherein, in the portion, signals are communicated between at least one of the one or more base stations and a respective one of a second plurality of terminals, and the method further comprises the step of:

using a compensation scheme to compensate for interference among the signals to the at least one of the one or more base stations from the second plurality of terminals.